Space Weather Forecast

Issued on Wednesday, 12 June 2024 at 12:16 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

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Space Weather Forecast Headline: Chance of isolated Moderate flares (R1-R2 radio blackouts). Chance of Minor solar radiation storm (S1) initially, this risk declining into the period.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar activity is Low with only Common class activity over the last 24hrs. There are currently seven sunspot regions on the visible disc with two recently numbered regions developing near the southeast limb. AR3709 in the southeast remains the largest region. It consists of a larger leader spot followed by some smaller trailing spots, although recent growth has stalled and some simplification has occurred. The two new regions in the southeast have shown some growth, and will be analysed further as they rotate more into view. The remaining regions are mostly simple and stable with a couple of previous spots fading or rotating off the visible disc.

No Earth-directed CMEs have been observed in the past 24 hours.

Solar Wind / Geomagnetic Activity: Solar winds generally declined from a peak around 410 km/s early in the period towards current speeds of around 350 km/s. The IMF (Interplanetary Magnetic Field) was weak throughout. The important north-south component was also weak with brief negative intervals. Geomagnetic activity was Quiet (Kp1-2) throughout.

Energetic Particles / Solar Radiation: Solar radiation levels remained below the S1/Minor radiation storm level.

Four-Day Space Weather Forecast Summary

Solar Activity: There is a chance of isolated Moderate flares, with just a slight chance of isolated Strong flares initially, these most probably from the large region recently rotated around the southwest limb in the near term. The flare risk reduces into the period pending further developments.

Solar Wind / Geomagnetic Activity: Solar wind speeds are now at background levels following recent CME influence and are currently expected to remain so through much of the period.

Overall, geomagnetic activity is likely to be mostly Quiet (Kp1-2), with a chance of Unsettled (Kp3) intervals during Days 3 and 4 (14-15 Jun) due to any weak high speed stream influence.

Energetic Particles / Solar Radiation: Solar radiation is currently close to S1/Minor solar radiation storm levels, but is expected to ease over the coming day. A chance of further S1 enhancement is maintained for Day 1 (12 Jun), before the risk eases into the period.

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Met Office Space Weather Forecast

Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	1	1	1	1
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	25	25	25	25
Very Active	R3 to R5 X	No	10	5	1	1

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	50	15	5	5
Very Active	≥ S3 *	No	5	1	1	1
* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)						

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